

Remarks/Arguments

Telephonic Interview

On June 5, 2003, Applicant's representative and the Examiner discussed the previously issued office action in this case, in which the cited references failed to disclose the self-starting feature of Applicant's invention. The Examiner agreed to send a supplemental office action restarting the response period and addressing the undisclosed feature.

Claim Rejections – 35 U.S.C. § 102

In the Office Action dated July 1, 2003, the Examiner rejected Claims 1-2, 6-7, 10-13, 15-17, 19, 39-40, 44-45, 47-48, 50-53, 57, 59-61, 63-66, 70, 72-74, 76-80, 82, 84 and 86 under 35 U.S.C. § 102(b) as being anticipated by Schur (U.S. Patent No. 4121420). The Examiner separately rejected Claims 1-2, 6-7, 10-13, 15-17, 19, 39-40, 44-45, 47-48, 50-53, 57, 59-61, 63-66, 70, 72-74, 76-80, 82, 84 and 86 under 35 U.S.C. § 102(b) as being anticipated by Yates (U.S. Patent No. 4051678). The Examiner further separately rejected Claims 1-2, 6-7, 10-13, 15-17, 19, 39-40, 44-45, 47-48, 50-53, 57, 59-61, 63-66, 70, 72-74, 76-80, 82, 84 and 86 under 35 U.S.C. § 102(b) as being anticipated by Morgan (U.S. Patent No. 4074534). Claims 1-2, 6-7, 10-13, 15-17, 19, 39-40, 44-45, 47-48, 50-53, 57, 59-61, 63-66, 70, 72-74 and 76-87 are pending.

As described by the Examiner, Schur, Yates and Morgan each disclose, in relevant part, a heat engine comprising a heating side expansion chamber, elastic walls for expanding and contracting in response to temperatures, support member for supporting said chambers for

rotations, tanks containing refrigerant that can be expanded and contracted, wherein the weights of said refrigerant provide a shift off-center balance to rotate the whole heat engine.

As disclosed in the application, applicant's invention relies on lateral weight shift (see figs 1, 2). In conventional heat engines, such as the ones cited by the Examiner, heating comes from the bottom and weight shift is from the bottom toward the top of the heat engine. Thus, a substantial component of the force generated by the heated expansion chamber is devoted to raising the center of gravity of the heat engine's rotating component rather than to shifting weight to achieve an off-balance condition. For example, in Schur, Morgan and Yates fluid must first be raised to destabilize the heat engine's rotating component. Force is required to move the fluid over the distance it is being raised and additional force is required because the movement must work against gravity. As claimed in Claims 1, 39, 53 and 66 (all amended herein), Applicant's invention requires that the force used to generate weight shift be substantially entirely perpendicular to gravity. This limitation is not taught or claimed in Schur, Yates or Morgan.

"A claim is anticipated only if each and every element set forth in the claim is found ... in a single prior art reference." *Verdegaal Bros. v. Union Oil of California*, 814 F.2d 628, 631 (Fed. Cir. 1987); MPEP § 2131. Because Applicant's invention includes the novel limitation that force generated by the respective expansion chambers be applied substantially entirely perpendicular to gravity, a limitation not found in the cited references, each and every limitation

of the application is not present in the cited references. Therefore, the cited references do not anticipate Applicant's invention. *Id.*

In addition, as amended herein, Claim 16 includes limitations wherein the weight shift that results in an off-balance condition to initiate and maintain rotation of the heat engine is a result of the movement of pistons that are attached to weights (see fig. 1). None of the references cited by the Examiner as anticipating art include a claim to weight shift by means of the movement of weights or weighted pistons. All of the cited references teach the movement of fluid to produce weight shift leading to an off-balance condition. Thus, the limitations of Claim 16 are not taught or claimed in the cited references, which provides a further reason why Claim 16 is not anticipated by the cited references.

Finally, Claims 15, 39, 53, and 66 include a limitation that each heating side expansion chamber be in communication with a corresponding cooling side expansion chamber. This limitation is not taught or claimed in Schur. In Schur, each heating side expansion chamber communicates only with the closed interior chamber. When a heating side expansion chamber in Schur expands, the fluid it moves is not directed to a corresponding cooling side expansion chamber, but to the closed interior chamber. In addition, Claims 15, 50 (depending from 39), 63 (depending from 53) and 76 (depending from 66) include a limitation that the angle between each heating side expansion chamber and its corresponding cooling side expansion chamber be less than 180 degrees. In Yates and Morgan, each heating side expansion chamber is in communication with a corresponding cooling side expansion chamber in a directly opposite

position (i.e., 180 degrees offset). The limitations of these claims are not taught or claimed in the cited references, providing an additional reason why these claims are not anticipated.

Claim Rejections – 35 U.S.C. § 103

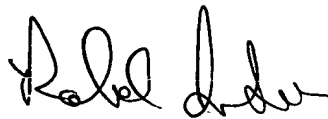
The Examiner rejected Claims 81, 83, 85 and 87 under 35 U.S.C. § 103(a) as being unpatentable over Schur in view of Lapeyre (U.S. Patent No. 3,984,985). Claims 81, 83, 85 and 87 have been cancelled.

Applicant believes that the set of claims is in condition for allowance and earnestly requests that the claims pass to issue. If the Examiner believes that contact with Applicant's attorney would aid in the examination of the application, the Examiner may contact Applicant's attorney at the telephone number listed below.

The Examiner is hereby authorized to charge any required fees not included herewith to Deposit Account 50-1546.

Respectfully submitted,

Date: October 7, 2003



Robert J. Sinnema
Registration No. 53,599
Bond, Schoeneck & King, PLLC
One Lincoln Center
Syracuse, NY 13202
315-218-8170